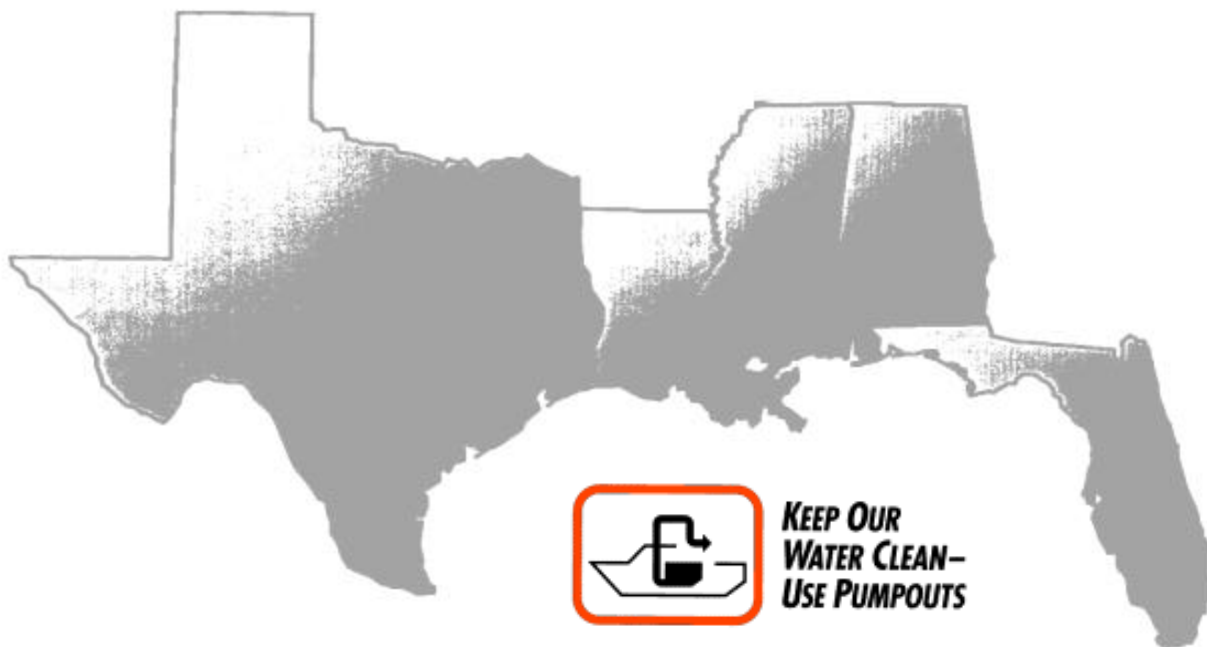

A Survey of Pumpout Installation, Operation, and Maintenance Costs:

A Focus on the Gulf of Mexico Region



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1.0 Introduction

Since 1992 the Clean Vessel Act (CVA) Program has provided at least 75 percent of the costs to install 2,200 pumpouts and 1,400 dumpstations nationwide (USFWS 2000). However, the Gulf of Mexico Program Partnership has recognized a continuing reluctance to participate in the CVA Program by some marina owners and operators in the five Gulf States. The primary reason given for non-participation is an incomplete understanding of the total costs to install, operate, and maintain a pumpout over the long-term.

This project attempted to determine these costs based on experiences of selected Gulf-region marinas that have participated in the CVA Program. Battelle conducted detailed interviews with representatives from 12 private and public marinas. The large majority of the marinas were located in coastal areas. In order to characterize the full range of pumpout installation options, three of the interviewed marinas were not located in the Gulf-region (two in North Carolina and one on the east coast of Florida). Battelle also interviewed several state CVA Program Coordinators and representatives from several pumpout manufacturers (e.g., Edson[®], Waubaushene[®], and Jonny-Trap[®]). This report summarizes cost information and cost-related anecdotal information associated with installing, operating, and maintaining a pumpout, and makes several recommendations for program improvements.

2.0 Background

Congress passed the Clean Vessel Act in 1992 to provide pumpout and dumpstation sewage disposal facilities to recreational boaters, as an alternative to overboard disposal. The Act established a 5-year federal grant program administered by the U.S. Fish and Wildlife Service (USFWS), and authorized \$40 million for use by the states. Congress re-authorized the Clean Vessel Act in 1998, extending the CVA Program through 2003, and provided an additional \$50 million.

The Act makes federal grants available to state CVA programs on a competitive basis. Priorities for funding include state programs that (1) provide public/private partnerships, (2) provide innovative ways to increase availability and use of pumpout stations, (3) include an education component, (4) have an approved plan (coastal states), (5) benefit waters most likely affected by sewage discharges, and (6)



target areas with high vessel/pumpout station ratios. States may sub-grant funds to public and publicly accessible private marinas for the construction, renovation, operation, and maintenance of pumpouts and dumpstations. Federal funds can constitute up to 75 percent of all approved project costs with the remaining funds provided by the states or marinas. A maximum fee of \$5 may be charged for use of pumpout facilities constructed or maintained with CVA grant funds. All states are encouraged to use some grant funds for education efforts, and coastal states can use grant funds for surveys and plans.

3.0 Interview Methodology

Contact information for potential marina interviewees was solicited from CVA Program Coordinators in the five Gulf States and North Carolina. Marinas had to have a least one pumpout or dumpstation installed through their state CVA program. Interviews, subject to the willingness of participating marina representatives, were purposefully targeted to represent (1) a variety of marina locations, sizes, and ownership (i.e., public versus private), and (2) a variety of pumpout installations, staffing situations, and sewage disposal options. Twelve interviews were conducted (see Appendix A for the interview questions). Appendix B provides general information about each interviewed marina and a summary of each interview.

To obtain answers for each of the 24 questions, and gain unsolicited anecdotal information at the same time, interviews were conducted in an informal conversational style. A written summary of the interview was promptly faxed to each interviewee, to provide the opportunity to add information or correct any inaccuracies. In general, all interviewees were enthusiastic about sharing information. In an effort to keep interviews short and flowing, estimates and approximations were accepted for all questions. In several cases interviewees returned the interview summary with cost corrections or exact figures.

Appendix C provides cost information, in a case study format, from two previous assessments of the CVA Program.

4.0 Interview Results

General

Six of the interviewed marinas were privately owned and operated, one was publicly owned but privately managed, and five were publicly owned and operated. In general it was found that the marina owners and operators provide pumpout service (1) as part of the full suite of boater services and (2) because of a genuine interest in and commitment to the environment. Most agree with the premise of the U.S. Environmental Protection Agency's (USEPA) document *Clean Marinas – Clear Value*, that environmentally conscious decisions will positively affect a marina's bottom line. At the same time, no marinas installed a pumpout with the expectation of it being profitable.

All interviewed marinas were CVA grant recipients, and had received funding for at least 75 percent of the total project costs for at least one pumpout. Most interviewees indicated that they had little trouble with the application and award processes, which were described by one applicant as “user friendly”. However, one interviewee found the process to be extremely time-consuming and described it as a “bureaucratic nightmare.” This particular interviewee estimated that he spent more than 30 hours preparing and submitting the CVA application. The difference in attitudes about the process is likely related to the applicant’s experience. The state CVA Program Coordinator can determine the level of assistance that will be required by assessing the experience and needs of each applicant.

Results of the survey demonstrate that installing a pumpout does not guarantee use. At two of the 12 interviewed marinas, usage is at or below one pumpout per month. In general, marinas with the highest pumpout usage (1) actively remind regular slip customers about the need for regular pumpout service, (2) actively “advertise” pumpout service at the fuel dock or other service areas (for example, by posting pumpout program logo signs), and (3) provide mobile or slip-side service in addition to service at the fuel dock.

Even though most marinas reported low or negligible operation and maintenance costs, there does appear to be considerable confusion among program participants about the reimbursement eligibility of these costs through the CVA Program. Similarly, most marinas were confused about the reimbursement eligibility of dedicated sewage treatment system costs and expenses for pumping and hauling sewage from holding tanks. Other areas of ambiguity include requirements for filing quarterly reports and keeping usage logs.

The majority of interviews indicated that perspective CVA Program participants would benefit greatly from two additions to the grant application package: (1) a document that summarizes reimbursable costs and (2) a document, possibly in the form of “Frequently Asked Questions,” that provides case studies and typical costs of installing, operating, and maintaining a pumpout.

Installation Costs

Interviewees were asked to estimate the total cost of installing their sewage reception facilities, including engineering, permitting, equipment, and installation. Installation cost is dependent on a wide variety of factors, hopefully well-representing the 12 interviewed marinas. Costs for a simple pumpout with direct access to a central sewer system ranged from \$3,000 to \$15,000 (see Table 1). Mr. Jan Delaney, Florida CVA Program Coordinator, reported that the average cost for pumpout equipment, engineering, and installation in his state is about \$16,000 for a stationary pumpout and \$35,000 for a boat-mounted pumpout. On the high end, multi-unit installations (some combination of stationary, cart-based, trailer-based, and boat-based units) and central unit installations requiring construction of electricity, water, and sewer lines over relatively long (>100 ft) distances, were found to cost upwards of \$35,000 to \$75,000 (see Table 1).

Relatively high installation costs were associated with remote locations and/or lack of direct access to sewage treatment. For example, Cypress Cove Marina, located in Venice, Louisiana,

reported installation costs of \$63,000. According to the Herb Holloway, Louisiana CVA Program Coordinator, Cypress Cove's high costs can be attributed to the marina's remote location, the distance between the end of the dock and access to sewage treatment, and the fact that only one company bid for the installation work. In combination, these factors contributed to one of the highest recorded installation costs in Louisiana. Similarly, Bill Turner, Director of the Matagorda Navigation District No. 1, attributed high pumpout installation costs at his facility (\$50,000 to \$75,000) to the remote location of the pier.

Operation and Maintenance Costs

Operation and maintenance costs varied according to several factors (e.g., equipment type, amount of use, and service mechanism), but averaged \$100 per year at 11 of the 12 interviewed marinas (ranging from negligible to \$500 per year) (see Table 1). Hose deterioration due to sun exposure was the most common maintenance expense. As expected, operation and maintenance costs seem well correlated with pumpout usage. The highest annual operating and maintenance costs – over \$14,000 for two stationary pumpouts and one boat-mounted pumpout – were reported at Halifax Harbor Marina in Daytona Beach, Florida. This is attributed to a very high relative volume of pumpout sewage collected (around 7000 gallons per month) and operation and maintenance of the boat providing mobile service (approximately 80 percent of the 7000 gallons is collected by the pumpout boat). It should be noted that both pumpout usage and operation and maintenance costs at Halifax Harbor Marina are much higher than other marinas in this survey.

In general it was found that self-serve units required more maintenance dollars than staffed pumpouts. It appears that some types of equipment require less maintenance and have less expensive parts than other types. Diaphragm pumps, for example, were reported to be sensitive to shells and bottle caps, whereas such holding tank debris does not affect vacuum pumps. John King, Harbour Village Marina in Hempstead, North Carolina, reported that such debris is responsible for approximately three \$300 repairs per year for his diaphragm pump. In fact, an overall preference for vacuum pumps over diaphragm pumps was noted in the interviews.

A representative from Edson® brand pumpouts suggested that manufacturers can often design a pumpout to meet the specific needs of a marina, such as a more durable self-serve unit or a high volume unit. All pumpout manufacturers interviewed for this study agreed that a pumpout system tailored to the needs of the marina will save on maintenance and replacement costs in the long-term.

Vandalism, Theft, and Liability

None of the 12 interviewed marinas experienced any theft or vandalism of a pumpout. Even at self-serve units in the most remote locations, theft and vandalism were not reported. While many interviewees could foresee the potential for liability at a self-serve unit, most had not had nor heard of any such occurrences. If the need arose, several interviewees felt that a clause in the slip contract, or a "Use at Own Risk" sign, would protect them from liability claims. Mr. George Wakefield from the Halifax Harbor Marina in Daytona Beach, Florida indicated that his marina was held liable for a pumpout that was used to pump oily bilge water into the municipal sewer

system. The pumpouts at Halifax Harbor are staffed, but the boater directed the attendant to the wrong tank. As a result, the policy at Halifax Harbor Marina has been changed to prohibit pumping from unlabeled tanks.

Staffed Service Versus Self-Serve Pumpouts

Seven of the interviewed marinas provided staffed pumpout service, one provided both staffed and self-serve units, and four others provided only self-serve units (see Table 1). Costs for providing staffed pumpout service were difficult for interviewees to itemize. It was generally felt that adding staffed pumpout service, where fuel-pumping service was already provided, did not add noticeably to operating costs.

It is interesting to note that most of the marinas that offer staffed pumpout service feel very strongly that staffing is both necessary for the marina and the customer. While few problems were reported with the self-serve situations, several interviewees conceded that their self-serve units required more maintenance and replacement parts because of misuse or uninformed customers; at the same time, they felt that the level of damage was acceptable.

Mr. Neil Ross, a well-know clean marina advocate from the Marine Environmental Education Foundation, contends that in order to have a positive experience, marinas must address the “three Cs” of pumpout operation: Care, Custody, and Control. He feels strongly that all pumpouts should be staffed, conveniently located, and easily operated, and that adequate funding for routine maintenance should be budgeted. Mr. Ross’ experience leads him to believe that addressing the “three Cs” would also greatly reduce any likelihood of vandalism, theft, or liability.

Sewage Disposal

Pumpouts at 10 of the interviewed marinas were connected to a municipal sewage collection line and treatment facility. The other two marinas were connected to package plant treatment systems, primarily constructed for use by facilities other than the pumpouts (*e.g.*, restrooms, restaurants, hotels). Considerable effort was expended to identify marinas in the Gulf region that used an onsite sewage treatment system or a holding tank/sewage-hauling service to treat or dispose of sewage from pumpouts, but none was found.

Several CVA Program Coordinators indicated that marinas interested in installing pumpouts are quickly dissuaded by the lack of a proximate connection to municipal sewage treatment. This limitation often occurs in remote coastal areas. Mr. Herb Holloway, Louisiana CVA Program Coordinator, views the lack of access to sewage treatment in coastal Louisiana as one of the most serious problems facing prospective participants in his state. The cost of sewage hauling in some areas of Louisiana is prohibitively high, from \$0.25 to \$0.50 per gallon. Mr. Holloway suggested that research into sewage treatment standards and requirements for pumpout sewage, and inexpensive systems to meet those requirements would be very worthwhile. Ms. Elizabeth Bensey, a representative from the City of Pascagoula, Mississippi, expressed similar concerns. Her conversations with area boaters reflect a need for more pumpouts on local rivers and bays, but she has found that installation in areas without direct access to sewer lines is

prohibitively expensive. The use of CVA grants for purchasing and installing a dedicated onsite sewage treatment system or holding tank (and regular sewage-hauling service) should be advocated as alternatives to municipal system connections.

5.0 Recommended Actions

- Provide a document that summarizes reimbursable costs in the CVA grant application package.
- Provide a document, possibly in the form of “Frequently Asked Questions,” that provides examples of installation and operation set-ups and costs, and the long-term costs of operating and maintaining a pumpout, in the CVA grant application package.
- Promote the use of CVA grants for purchasing and installing dedicated onsite sewage treatment systems or holding tanks (and regular sewage-hauling services) as alternatives to municipal system connections.

6.0 Acknowledgements

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Handcart pumpout picture: USEPA, <http://www.epa.gov/OWOW/NPS/marinas/ch12.html>

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Table 1. Comparison of Pumpout Installation, Operation, and Maintenance Costs at 12 Public and Private Marinas

Marina Name and Location	No. of Boat Slips	Public or Private Entity	Pumpout Equipment	Total Installation Cost (Percent Covered by Grant)	Sewage Disposal	Staffing	Estimated Usage*	Estimated Annual O&M Costs*	Vandalism/Theft/Liability History
Broadwater Marina Biloxi, MS	118	Private	1 stationary Waubaushene® vacuum	\$7,000 - 7,500 (75%)	Municipal connection	Staffed	20 pumpouts / mo.	\$ 50	None
Clearwater Municipal Marina Clearwater, FL	150	Public	1 central Waubaushene® vacuum system, with slip-side pumpouts	\$35,000 (75%)	Municipal connection	Self-serve	120 pumpouts / mo.	< \$ 200	None
Cypress Cove Marina Venice, LA	200	Private	1 stationary Keco® vacuum 1 mobile (trailer) Keco® vacuum 1 dumpstation Keco®	\$63,000 for all (75%)	Onsite package plant	Staffed	Low	Negligible	None
Dog River Marina Mobile AL	70	Private	1 stationary Sealand® vacuum	\$10,000 (75%)	Municipal connection	Staffed	20 – 30 pumpouts / mo.	< \$ 50	None
Halifax Harbor Marina Daytona Beach, FL	550	Privately managed, city owned	2 stationary Waubaushene® vacuum 1 mobile (boat) Waubaushene® vacuum	\$47,000 for all (75%)	Municipal connection	Staffed	7000gal. / mo.	\$14,000 (the boat is costly to run and maintain)	None
Harbor Village Marina Hampstead, NC	200	Private	1 stationary Edson® vacuum 1 stationary Sealand® diaphragm (currently out of service)	\$10,000 - 12,000 for Edson only (80%)	Municipal connection	Self-serve	30 – 100 pumpouts /mo. (busy season)	\$ 500	None
Island Moorings Marina Port Aransas, TX	285	Private	1 stationary Edson® vacuum 1 mobile Edson® vacuum	\$13,000 for all (75%)	Municipal connection	Both	120 – 140 pumpouts /mo.	Negligible	None
Lakepoint State Park Marina Lake Eufaula, AL	200	Public	1 stationary Jonny-Trap® vacuum	\$3,000 - 4,000 (75%)	Onsite lagoon and package plant	Self-serve	40 pumpouts /mo. (busy season)	\$ 50	None
Mariner's Village Marina Mandeville, LA	175	Private	1 stationary Edson® vacuum	\$15,000 (75%)	Municipal connection	Staffed	7 – 10 ** pumpouts /mo.	\$ 60 **	None
Matagorda County Navigation District No. 1 Palacios, TX	400 ***	Public	1 stationary Keco® vacuum	\$50,000 - 75,000	Municipal connection	Staffed	1 pumpout/mo.	Negligible	None
Inner Harbor Marina Pascagoula, MS	31	Public	1 stationary Sani-Service® diaphragm	\$10,000	Municipal connection	Self-serve	Regular use from slip customers	\$100	None
Town Pier Columbia, NC	2 docks	Public	1 stationary Jonny-Trap vacuum	\$3,400 (100%)	Municipal connection	Staffed	1 - 2 pumpouts / yr.	Negligible	None

* Includes all pumpouts and dumpstations at the marina.

** Based on past 10 years of use of one stationary Keco® diaphragm pump.

*** Primarily a commercial port for shrimp boats.